

AmAlOx 68 Alumina

Technical Data

AmAlOx 68 (**A**stro **M**et **A**luminum **O**xide) is a high purity 99.8% aluminum oxide (alumina) ceramic which has been developed and optimized for maximum wear resistance and corrosion resistance. A high density, diamond like hardness, fine grain structure and superior mechanical strength are the unique properties that make AmAlOx 68 the material of choice for a wide range of demanding applications. AmAlOx 68 provides a cost-effective, engineered material solution in applications that require the optimum in wear resistance, corrosion resistance, high temperature stability, low thermal expansion, high stiffness to weight ratio, high dielectric strength and biocompatibility. Astro Met, a full service advanced ceramics manufacturer, produces both as-fired and precision machined AmAlOx 68 components to customer requirements in both prototype and production quantities. The successful use of AmAlOx 68 components in numerous industries have enabled Astro Met customers to solve existing problems and develop new products and processes that otherwise would not have been possible with conventional engineering materials.

<u>TYPICAL PROPERTIES</u>	<u>UNITS</u>	<u>VALUE</u>
Composition	wt%	99.8% alumina
Color	- - -	White
Bulk Density	g/cm ³	3.93
Water Absorption	%	0
Gas Permeation	%	0
Grain Size	Microns	4
Hardness (Vickers)	HV	2017
Flexural Strength	MPa (psi • 10 ³)	382 (55)
Modulus of Elasticity	GPa (psi • 10 ⁶)	393 (57)
Fracture Toughness	MPa • m ^½	5
Poisson's Ratio	- - -	0.22
Thermal Expansion (25°C-1000°C)	10 ⁻⁶ /°C (10 ⁻⁶ /°F)	8.2 (4.6)
Thermal Conductivity	Btu•in/ft ² •h•°F	260
Specific Heat	cal/g•°C	0.21
Maximum Temperature Use (no load)	°C (°F)	1700 (3092)
Dielectric Strength	ac-volts/mil	230
Dielectric Constant		9.7



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